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Gastroscopy and Esophagoscopy

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The official Publication of The American Gastroscopic Society

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This Bulletin is to be issued quarterly. Manuscripts should be directed to the Chairman of the Editorial Board. Rejected manuscripts will be returned, others remain the property of The Bulletin. Manuscripts should be typewritten, double spaced on 8½ x 11" paper with 1½ inch margin on both sides. Title and author's name should appear in the upper right hand corner of each page.

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SECRETARY'S NEWSLETTER

A. M. Olsen

Our new President, Dr. C. Wilmer Wirts, is now in Europe and is, therefore, unable to provide us with a President's Page. Therefore, in this issue, the Secretary will try to give you the news of our Society. Much of what I have to say will not be new to those who attended the annual meeting, but I should like to bring the rest of you up to date.

Our annual meeting in Atlantic City was very successful. Approximately 250 physicians registered and attended our scientific sessions at Haddon Hall; in fact, the Viking Room was nearly full most of the day. The three symposia, Gastroscopic Photography, Endoscopic Biopsy, and Esophagoscopic Instruments were very well received. In addition, several excellent presentations were made by individual members of the Society.

Our business meeting took place at the end of the day. After reading the Minutes and the Treasurer's Report, the Auditing Committee, consisting of Dr. Berry and Dr. Wolff, announced that the books were in satisfactory condition and that we are solvent. The Nominating Committee consisting of Drs. Flood, Deutsch and Shull, presented the following slate of officers: Dr. C. Wilmer Wirts, President; Dr. Paul L. Shallenberger, Vice-President; Dr. Arthur M. Olsen, Secretary-Treasurer; Governing Board, Drs. J. Edward Berk, Clifford J. Barboka, John Tilden Howard, Donovan C. Browne; Chairman of Editorial Board, Dr. John M. Rumball; Editor, Dr. Roy Sexton; Chairman of Admissions Committee, Dr. Frank B. McGlone. It was moved and seconded that the nominations be closed, and the Secretary was instructed to cast an unanimous ballot for the above slate of officers.

It was then announced that sixteen physicians had been elected to membership since the last annual meeting of the Society, and they are as follows: Dr. Mark W. Garry, V. A. Hospital, Wood, Wisconsin; Dr. Walter H. Jacobs, G. E. Research Laboratory, 751 East 63rd Street, Kansas City, 10, Missouri; Dr. Allan A. Kaplan, 407 Lincoln Road, Miami Beach, Florida; Dr. David Katz, 175 Crary Avenue, Mount Vernon, New York; Dr. Harold Koretz, V. A. Hospital, Bath, New York; Dr. Edward J. Kurt, 3140 Dorr Street, Toledo, Ohio; Dr. Harold P. Lazar, 27-31 Ridge Street, Middletown, New York; Dr. Jacob Lichstein, 6360 Wilshire Blvd., Los Angeles, California; Dr. Martin Liemer, 963 Park Avenue, Plainfield, New Jersey; Dr. Julius G. Parker, 2711 Henry Hudson Parkway, Riverdale 63, New York; Dr. Ernesto J. Pauletti, G. I. Clinic, U. of California Medical Center, 3rd & Parnassus Avenue, San Francisco, California; Lt. Col. Norman M. Scott, G. E. Service, Brooke Army Hospital, Ft. Sam Houston, Texas; Dr. Stephen J. Stempien, V. A. Hospital, Long Beach, California; Dr. Irmin Sternlieb, Albert Einstein College of Medicine, 1300 Morris Park Avenue, New York 61, New York; Dr. Gaston R. Vantrappen, Universiteitsklinieken St. Raphael Louvain, Belgium, and Dr. Julius Wolf, V. A. Hospital, 130 West Kingsbridge Road, Bronx 68, New York.

The change in requirements for admission was also discussed. Fifty protocols are no longer required, but a paper on a gastroscopic or esophagoscopic subject or a case report with appropriate discussion must be submitted with the application. The manuscript must be suitable for publication in the Bulletin. New application blanks and instruction sheets for applicants have been printed. It is noted that the applicant must designate his training in esophagoscopy as well as in gastroscopy in making out his application blank.

Our Bulletin came up for considerable discussion, and the following important

decisions were made. All proceedings of the annual meeting shall be submitted to the Chairman of the Editorial Board for publication in the Bulletin. It has been definitely decided to publish the Bulletin four times a year. With the proceedings of the annual meeting, the papers and the case reports submitted by applicants and the additional material submitted by the members of the Society and other authorities in the field of esophagoscopy and gastroscopy, Dr. Rumball and Dr. Sexton should have no difficulty. Nevertheless, the Editorial Board and the Editor must have everybody's co-operation if the new plan is to work effectively. The final decision was to change the name of the Bulletin to "The Bulletin of Gastroscopy and Esophagoscopy, the Official Publication of the American Gastroscopic Society."

It was announced that the next annual meeting of the Society will take place in New Orleans on March 30, 1960. We shall meet at the Roosevelt Hotel for an afternoon scientific session followed by the social hour and banquet. Dr. Donovan Browne is in charge of local arrangements for this meeting, and we look forward to a very fine session.

The annual banquet in Atlantic City was attended by nearly 100 people. Dr. Berk served as toastmaster. The Rudolf Schindler Award was presented to Dr. Herman Moersch, and Dr. Berk was kind enough to let your secretary make the presentation. As the final event, Captain Finn Ronne, Military Commander and Scientific Leader of Ellsworth Station in Antarctica during the International Geophysical Year, gave an excellent talk with remarkable movies of his experiences in the Antarctic.

All in all, it was a fine meeting, and all of us who were there enjoyed it very much. We hope to make next year's meeting equally interesting.

I should like to again make a plea for contributions to the Bulletin. Please send your papers and case reports to Dr. John Rumball, Director of Medical Services, Veterans Administration, Washington 25, D. C. The Bulletin is beginning a new era, with its new name, its new Editorial Chairman, and its new schedule for publication. Let's all get behind it!

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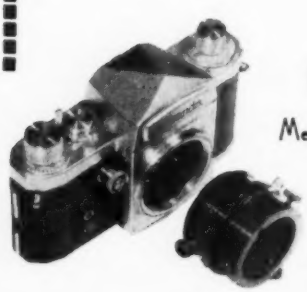

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ARTICLES

Gastroscopic Color Photography with the Gastroflex

Ivan C. Keever, M.D., *and*
Clifford J. Barborka, M.D.

One year ago this society was privileged to view gastroscopic color photographs presented by leaders in the field from Japan,[1] France,[2] and the United States.[3] The equipment used to obtain these photographs included an intragastric camera with which blind photography was performed, and the other systems used external cameras but differed with respect to illumination within the stomach at the time of exposure. Color photography is a relatively new development in gastroscopy, its recent history dating to the work of Segal and Watson in 1948 [4] who employed coated lenses in their gastroscope, an improved lamp, and a synchronization unit to obtain color transparencies of their endoscopic findings. Some of the features of this equipment, with simplification and modification, have been applied successfully by Nelson.[5]

Adequate illumination within the stomach capable of rendering good resolution on color emulsions with relatively short exposure times represents the main problem to be overcome in gastroscopic color photography. It is believed that the instrument described in this paper represents a significant advance in this direction. The instrument was developed under the guidance of Professor Charles Debray of Paris [6] and is manufactured by Optique et Precision de Levallois. It is our purpose to describe the components and the operation of the Gastroflex in some detail and to present some illustrations of our results.

Apparatus

The Gastroflex (Fig. 1) is of standard length, it is slightly heavier and its diameter is slightly less than that of most gastroscopes in use today. The optical system is similar to that of other instruments except that the eyepiece assembly has been modified by the addition of a knurled ring which permits the interchange of an ocular and a 35 mm. single-lens reflex camera. Focusing flanges on both ocular and camera permit critical focusing of the image.

The lampbearer (Fig. 2) is unique in design and is interchangeable with the standard lamp. Two lighting units have been sealed in a single plastic housing, one being a low voltage incandescent lamp used for routine gastroscopy, and the other, a high voltage electronic flash lamp used only for gastroscopic photography. The lampbearer is 15 mm. longer than the standard tungsten filament lamp housing and its diameter is the same. The incandescent lamp functions on a rheostat-controlled, low voltage, alternating current and is comparable to lighting systems of other gastroscopes in design except that its light intensity is slightly less. The intensity of the electronic flash may be varied slightly by selecting the number of electrolytic condensers (one to

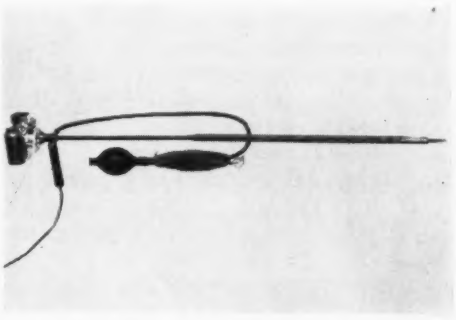

Figure 1 The Gastroflex with the Gastrophot attached

three) to be discharged into the flash circuit.

Properly used, the life expectancy of the lamps is sufficient to allow several hundred examinations. Operating the incandescent lamp at maximum voltage has resulted in shorter life; at sub-maximal voltage the life

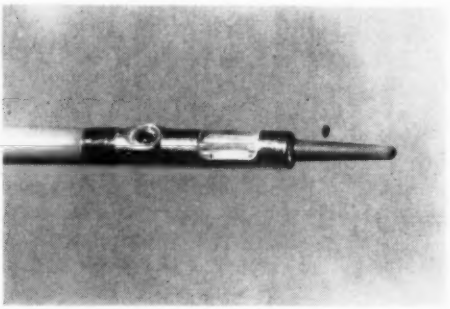

Figure 2 Gastroflex tip with lamphousing containing incandescent and electronic flash lamps

expectancy is prolonged. Investigation is under way to find means of improving the efficiency and of increasing the maximum light intensity of the incandescent lamp. Frequent and extensive use of the flash lamp at its maximum intensity would be expected to shorten its life. Properly used, each lighting unit should last 6 to 12 months. The experience of the manufacturer indicates that when one bulb fails the other is near the end of its useful life, but in our hands the life of the flash lamp has been considerably longer than that of the incandescent lamp.

The camera, or Gastrophot (Fig. 3), was designed especially for this instrument and is adapted to the rigid viewing end of the gastroscope. It is constructed of lightweight metal and is compact and rugged. The single lens reflex principle permits continuous observation through the gastroscopic lens system except for the 1/25 second when exposures are made. The exposure time cannot be varied from 1/25 second but this is of no significance since effective exposure is governed by the duration of the flash which is in the order of 1-2/1000 second. Any 35 mm. color film may be used in the camera but we have found Type F Kodachrome most satisfactory. Each turn of the loading knob advances the film 24 mm., which produces thirty 24x24 mm. frames on a 20-exposure film. The image size of the original transparency is 6.5 mm. which may be inspected satisfactorily with a hand lens or projected in a standard 2x2 inch projector.

The mirror in the camera serves several functions: it deflects the gastroscopic image into the eyepiece; it acts as a shutter in exposing the film; and the motion of the mirror at the time of exposure actuates a low voltage relay inside the power unit which charges the flash tube. An instant later, the mirror rides over another contact, activating the flash unit just as the film is completely exposed. Continued rotation of the mirror returns it to its original resting position, covering the film.

The loading knob mechanism advances the film, operates a frame counter, and cocks the exposure release button on the camera, preventing double exposures.

The power unit (Fig. 4) provides high voltage current for the electronic flash, low voltage current for the incandescent lamp, and contains the necessary relays. All necessary controls for operating the instrument are mounted on the panel. It operates on alternating current only, a fuse selector switch being fitted with the input trans-

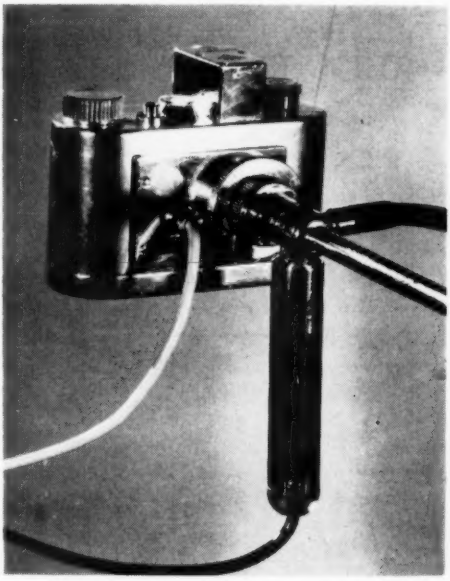

Figure 3 The Gastrophot showing loading and rewinding knobs, release button, frame counter, and viewfinder. The focusing flange is located on the lens barrel.

former to permit operation of the unit on 110, 125, 150, 225, and 250 volts.

A micro-ammeter on the power unit may be used periodically to check for shorts or leakage in the high voltage circuit, a button being provided to throw the micro-ammeter into the circuit. A rheostat controls the intensity of the incandescent lamp. Two sockets accept cables from the Gastroflex and the Gastrophot. A bypass button in the flash circuit is used to test the flash mechanism and operates independently of the contacts in the camera.

Four toggle switches appear on the panel; one serves as the off-on switch for the power unit; the remaining switches serve three electrolytic condensers which supply energy to the electronic flash circuit and permit

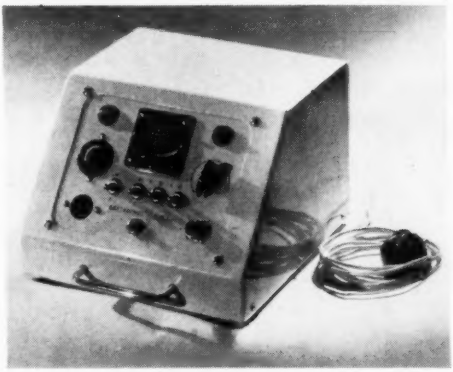

Figure 4 The power unit with its control panel including indicator lamps, micro-ammeter fuse selector, switch rheostat, toggle switches, sockets, and bypass button.

the operator to select capacities of 30, 45, or 60 joules to be discharged into the circuit, varying the intensity of the electronic flash. Full charge on the condensers is achieved in a few seconds and is indicated by the winking of a light on the control unit. Movement of the mirror in the camera, initiated by the release button, activates a relay in the control unit for an instant to connect the condensers to the flash lamp circuit. The winking light goes out as the condensers are discharged and the charging cycle is repeated. Except for this instant, the gastroscope is completely isolated from the high voltage supply.

Safety Features

The electric supply to both bulbs is conveyed from the power unit to the gastroscope in separate insulated leads encased in waterproof plastic. These leads terminate in the junction of the handle and the Gastroflex. Two meticulously insulated leads carry the currents to the lamphousing, one wire carrying 12 volts at 70 milliamperes and supplying the tungsten filament of the incandescent lamp; the other carries the 1-2/1000 second discharge of 180 volts from the condensers and supplies the electronic flash tube. The contacts of the lamphouse junction are watertight to insure safety at this point.

The metal bodies of the gastroscope and camera, the insulating sleeves of the cables, and the metal case of the power unit are grounded through a third lead in the cable leading from the wall outlet to the power unit. A further safety device involves the use of the micro-ammeter on the power unit which can be checked by the gastroscopist at any time. With the condensers fully charged (indicated by the winking light), the micro-ammeter may be thrown into the high voltage circuit by means of the test button. More than a minimal deflection of the micro-ammeter indicates that a significant leak is present. Under these circumstances, the electronic flash should not be used, and the cause of the leak should be sought. In designing and testing this safety mechanism, the most common cause of leaks was faulty junction contacts due to moisture or dirt. Other possible sources of leaks include the lamphousing proper, the cable-powered unit junction, or within the power unit itself. With proper use of the instrument we have encountered no leaks and are aware of none having been experienced by gastroscopists using the instrument in this country, Australia, and Europe.

Procedure

Simplicity in the use of this instrument has been emphasized. The Gastroflex may be passed with either the ocular or camera in place. We perform routine gastroscopy with the camera attached and photographs are taken as indicated.[7] Both lamps are tested prior to each procedure and the flash circuit is checked by throwing the micro-ammeter into the circuit. If little or no deflection is observed, gastroscopy may pro-

ceed. With the instrument in the stomach, the flash circuit is checked again with the micro-ammeter. When a lesion is to be photographed, the image is focused, centered, and the release button on the camera is pressed, which opens the shutter and activates the electronic flash. During the exposure period (1/25 second) the image in the viewing lens is obliterated by the rotating mirror but this interruption is not apparent. The patient need not suspend respiration since the effective exposure of 1-2/1000 second stops any motion in the stomach due to respiratory movements, peristalsis, or transmitted pulses. The loading knob is turned, which advances the film and cocks the release button. Another photograph may be taken after the few seconds necessary to recharge the condensers. This procedure can be repeated as desired. The single lens reflex optical system permits the precise image viewed through the camera to be recorded on film merely by pressing the release button.

The color plate shows a selection of normal and abnormal conditions photographed with this equipment and enlarged from the original transparency diameter of 6.5 mm.

Discussion

Simplicity in the technique of accurate documentation of gastroscopic findings in color, consistent performance of the instrument, and safety to patient and operator are desirable features of this apparatus. The Gastroflex is light, compact, and its simplicity lies in the fact that a color transparency may be obtained each time the release button is pressed. Manipulation of the camera, light source, or the patient are eliminated entirely. Since the single lens reflex camera is utilized for both inspection and photography, the instrument may be used conveniently for all gastroscopies. The quality of the transparencies obtained depends primarily on the operator's technique with respect to selection of the field to be photographed, proper orientation, accurate focusing, and selection of the proper flash intensity.

We believe that the problem of light transmission by the gastroscopic lens system in gastroscopic color photography has been overcome with the incorporation of safe electronic flash equipment into the gastroscope. The flash technique also eliminates the difficulty experienced in photographing the stomach subject to physiological motion such as peristalsis and transmitted pulses. Color reproduction with the brilliant flash has improved significantly. The safety features incorporated into this instrument have been confirmed in three years of use without an accident of any kind being reported.

Acknowledgement: This work has been aided in part by grants from the Lakeland Foundation and the Charles H. and Bertha L. Boothroyd Foundation.

Dr. Ivan C. Keever
700 North Michigan Ave
Chicago 11, Illinois

The color plate is included with permission of Williams and Wilkins Company, publisher of Gastroenterology.

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References

[1] *Tasaka, S. and Ashizawa, S. Studies on gastric diseases using the gastrocamera. Bull. Am. Gastroscopic Soc. 5 (3):12, 1958.*

[2] *Debray, C. and Housset, P. Color gastro-photography with an electronic flash. Bull. Am. Gastroscopic Soc. 5 (3): 9, 1958.*

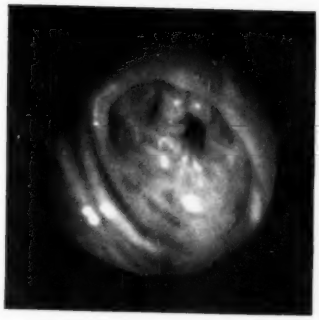
[3] *Nelson, R. S. Gastroscopic photography in the demonstration of gastric tumors (Abstr.) Bull. Am. Gastroscophic Soc. 5 (3): 12, 1948.*

[4] *Segal, H. L. and Watson, J. S. Jr., Color photography through the flexible gastroscope. Gastroenterology 10:575, 1948.*

[5] *Nelson, R. S. Routine gastroscopic photography. Gastroenterology 30:661, 1956.*

[6] *Debray, C. and Housset, P. Photographie en couleur a travers le gastroscope flexible: Utilisation d'un flash electronique. Semaine hop. Paris 32:2238, 1956.*

[7] *Keever, I. C. and Barborka, C. J. Electronic flash gastroscopic color photography. Gastroenterology 36:743, 1959.*



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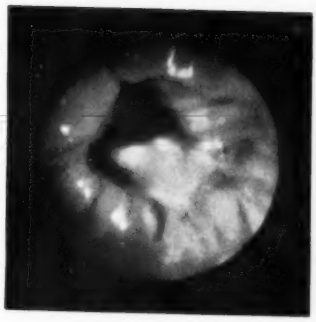

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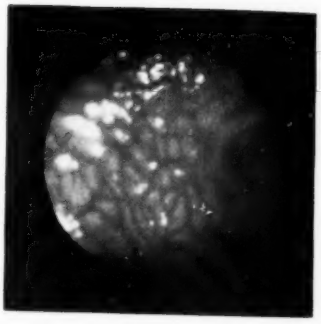

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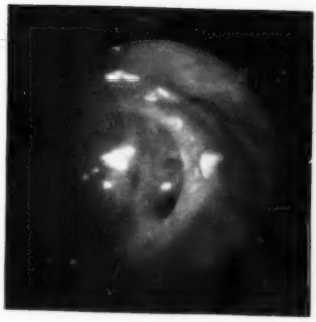

Fig. 4

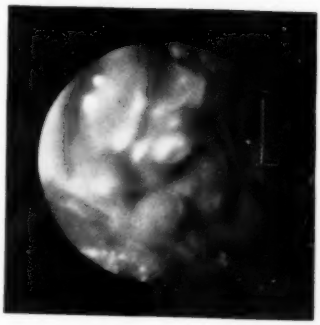

Fig. 5

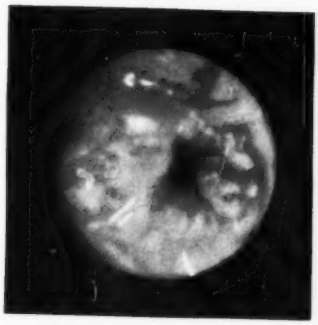

Fig. 6

Gastroscopic Photography in the Demonstration of Gastric Tumors

Robert S. Nelson, M.D.*

During the past three years we have used gastroscopic color photography for the routine recording of gastric lesions. The method and apparatus have been previously described [1, 2, 3]. During the past year it has been possible to modify and simplify both the apparatus and procedure by adapting a reflex camera, to which is added a simple lens and bayonet attachment. This eliminates the separate reflex mechanism which is now an integral part of the camera. A foot switch has also been added, which puts light control directly in the hands of the operator. With this equipment the gastroscopist may select a lesion, switch the light to maximum intensity (50 volts), snap the picture, and rewind and cock the camera himself. The gastroscope and large lamp are unchanged and the principles on which the procedure is based are the same. The modified equipment has the advantages of being more maneuverable, completely under the control of the gastroscopist, and commercially available†.

During this same period, the new Super Anscochrome film has been tried extensively, and found to be the best for universal use in color photography of the stomach. Routine exposure time is ½ second. While this film occasionally varies in quality, it appears to give the best overall results.

This film and the modified apparatus were used in the photography of almost all of the cases to be demonstrated.

Carcinoma

Diffuse carcinoma of the stomach is frequently different in appearance from the nodular, discrete masses pictured by the artist. The lesions are often shaggy, necrotic, mucous-covered and represent considerable difficulties to the photographer. While most widespread tumors are readily diagnosed by X-ray, and gastroscopy in such cases may be purely academic, we have attempted their photography to demonstrate their actual characteristics, and, in some instances, to determine maximum extent of involvement. Any information of gastric carcinoma may in time be of value.

Case 1. A 55-year-old white male truck driver complained of anemia and mild indigestion. Eleven months previously he had been operated upon for a perforated peptic ulcer, which was biopsied and reported as non-malignant. Two months prior to admission he had had a coronary occlusion. X-ray examination revealed a fungating carcinoma involving the lower fundus, pars media and proximal two-thirds of the antrum and this finding was confirmed on gastroscopy. He did well following resection for two weeks, then developed a new coronary occlusion and expired.

Case 2. A 55-year-old negro male farmer presented with a 30-pound weight loss and intermittent epigastric pain. He had been seen by several physicians, one of whom put him on a peptic ulcer diet without relief. X-ray showed a massive fungating carcinoma occupying the entire body and antrum. Gastroscopy demonstrated tumor masses throughout these areas. Two months following resection his general condition was good.

Carcinomatous Ulcers

Although many gastric ulcers are correctly diagnosed as malignant by X-ray, gastroscopic examination may add valuable information as to their extent and character. The finding of actual tumor masses by gastroscopy clinches the diagnosis. Large ulcers are difficult to visualize in their en-

* *Department of Medicine, The University of Texas, M. D. Anderson Hospital and Tumor Institute, Houston, Texas.*

† *Metro Tec Scope Makers, 154 East Erie Street, Chicago 11, Illinois.*

Aided by a grant from the American Cancer Society.

Read before The American Gastroscopic Society, Seventeenth Annual Meeting, Washington, D. C., May 24, 1958.

tirety through the gastroscope, but different areas may be seen and photographed. Recorded comparisons of benign and malignant ulcers may in time help to clarify the difficult problem of differentiation.

Case 3. This 48-year-old negro female cook had a four months' history of cramping epigastric pain and vomiting. Physical examination revealed a sharply circumscribed mass in the left upper quadrant. X-ray of the stomach described a large ulcerating carcinoma along the lesser curvature, malignancy being diagnosed largely because of evidence of infiltration of the gastric wall. Gastroscopy confirmed the nature of the lesion. At resection extension of the tumor to adjacent nodes was found, but one month later she was doing well.

Case 4. A 58-year-old white female housewife had complaints of abdominal pain, nausea and distention for one year. Seven weeks before admission a cholecystectomy revealed the presence of stones. Upper gastrointestional X-rays reveald a large flat ulcer in a malignant neoplasm involving 50 per cent of the stomach, which was felt to be either carcinoma or lymphoma. Gastroscopy visualized the ulcer, as well as tumor in the crater which was felt to be carcinoma. At surgery a carcinomatous lesion was found which was too extensive for resection.

Some ulcerations, of a questionable nature on X-ray examination, may be diagnosed more readily with the help of gastroscopy. Serial visualizations and photographs will help to clarify the progress and nature of such lesions, two of which are now described.

Case 5. A 36-year-old Latin-American male laborer complained of severe epigastric pain of 8 months' duration, relieved by milk and antacids. X-ray examination revealed initially a very small gastric ulcer of the lesser curvature with considerable deformity. Gastroscopy at this time described the same ulcer, but in addition a much larger acute ulcer opposite. Repeat X-ray 14 days later was said to show a superficial spreading carcinoma of the lesser curvature with serpiginous ulceration. Another gastroscopy showed some healing of the larger ulcer previously visualized, with marked cicatricial contraction. At surgery, two apparently benign ulcers were found, but section of the resected stomach revealed malignant cells in the submucosa.

Case 6. This 57-year-old white male painter was admitted because of epigastric pain, nausea, vomiting and hematemesis, with a seven years' history of peptic ulcer. In addition, he had had removal of a squamous carcinoma of the face four years previously, and now presented X-ray evidence of metastaic involvement of the pterygoid plates, foramen ovale, and petrous pyramid of the skull. X-ray and gastroscopy on three occasions both showed a large gastric ulcer of the lesser curvature, with some evidence of healing over a period of six weeks. All gastrointestinal symptoms ceased, and gastric resection was decided against because of the extensive involvement of the skull by tumor.

Lymphoma

The conventional gastroscopic description of lymphoma of the stomach is usually that of a plate-like involvement of a portion of the wall, with heavy folds. In our experience, however, it may present in many forms: as a diffuse, gastritis-like lesion, superficial ulcer, or massive tumor. Gastroscopic examination may help in early diagnosis and give a hint as to the proper nature of the lesion.

Case 7. A 52-year-old white male car driver had a history of indigestion for 10 years, and had recently felt full with the ingestion of small amounts of food. X-ray examination revealed a linitis plastica type of involvement; gastroscopy showed a diffuse, edematous, hemorrhagic type of mucosa without visible tumor. At surgery a biopsy showed lymphocytic lymphosarcoma and he was closed without resection. A total X-ray therapy of 4,000 roentgens was given over the stomach area and six months later he was much improved and able to work.

Case 8. This 71-year-old white female, who had had a diagnosis of lymphocytic lymphosarcoma of the neck three years previously, successfully treated with X-ray therapy, had complained of epigastric distress for six months. Gastrointestinal X-rays revealed a shallow ulceration of the stomach at the incisura, with stiffening of

the wall, and gastroscopy confirmed this finding. Despite treatment she went gradually downhill and expired.

Case 9. A 56-year-old white female with known lymphosarcoma had a massive upper gastrointestinal hemorrhage which responded to medical management. On X-ray examination a flat ulceration high up on the greater curvature was seen and this was confirmed by gastroscopy. Sympomatic improvement was noted on X-ray therapy.

Case 10. This 39-year-old white female housewife had received X-ray and chemotherapy over a period of four years because of a generalized lymphosarcoma involving especially the intestinal tract, proven on biopsy. Her complaints were nausea and diarrhea. X-ray examination showed deformity of the antrum of the stomach, as well as probable involvement of the small intestine. Gastroscopy revealed a peculiar pressure deformity of the antrum without mucosal involvement. She developed ascites and deteriorated rapidly.

Case 11. A 55-year-old white male, with a one year history of generalized lymphocytic lymphosarcoma, diagnosed on biopsy of a neck node, complained of weakness, anorexia and abdominal pain. X-ray and gastroscopy both confirmed the presence of a large mass in the mid-portion of the stomach. He refused treatment and returned one month later in poor general condition. Repeat X-ray and gastroscopy showed progress of the lesion. On resection, a huge lymphosarcomatous mass was removed from the mid-portion of his stomach.

Benign Tumor

Benign tumors of the stomach may be quite large or very small. All may cause symptoms, although most are not an immediate threat to life except by hemorrhage. The larger tumors are readily diagnosed by X-ray examination, but gastroscopic examination is often desirable to clarify their nature. The smaller tumors are frequently missed by X-ray, and it is here that the gastroscope is of prime importance in diagnosis.[3]

Case 12. A 59-year-old colored mechanic had epigastric burning and a full feeling for one year. He finally noted weakness and was found to be anemic; an upper gastrointestinal series revealed a large mass occupying the greater part of the body of the stomach, especially on the greater curvature, and this was thought to represent a carcinoma. At gastroscopy a large rounded tumor mass extended from posterior to anterior wall, which was diagnosed as leimyosarcoma, leiomyoma or carcinoma. At surgery a large adenomatous polyp was removed.

Case 13. This 57-year-old white male truck driver complained of weight loss for six months and tarry stools for three months. Following an episode of hematemesis, an upper gastrointestinal X-ray series revealed a large tumor mass of the body of the stomach, diagnosed as myoma or myosarcoma. Gastroscopy showed a pedunculated mass arising on a stalk from the anterior wall of the stomach, probably leiomyoma. An ulcerated leiomyoma was removed at surgery.

Discussion

Gastroscopic photography of stomach tumors is useful mainly for 1) recording the characteristics of such lesions for teaching purposes, and 2) proof of the existence of small tumors not visible by X-ray prior to surgical removal. Color photographs, accumulated over a period of years, may aid in tracing the natural history of tumor growth in the stomach. With this aid, students of gastroscopy may become acquainted with the intragastric appearance of such lesions, as well as the views likely to be obtained, during their training period. This is impossible with the oversimplified artists' conceptions now available. Widespread use of such photographic methods should be a definite advance in the future development of gastroscopy.

Acknowledgement: The technical assistance of Mr. Robert Kolvoord, Mr. Willis Sanders and Miss Sharyn Fruit is gratefully acknowledged.

References

[1] *Nelson, R. S.: Routine Gastroscopic Photography, Gastroenterology 30:661, 1956.*

[2] *Nelson, R. S.: Movements of the Gastric Antrum, Gastroenterology 30:669, 1956.*

[3] *Nelson, R. S.: Heterotopic Pancreatic Tissue in the Stomach—Gastroscopic Features, Gastroenterology 34:452, 1958.*

[4] *Nelson, R. S.: Gastroscopic Photography, Gastroenterology (to be published).*

Satisfactory Gastroscopy after Abrasion of the Gastric Mucosa for Cytologic Study

Walter H. Jacobs, M.D.*

Recently, the cytologic study of specimens obtained from the stomach by abrasive or exfoliative techniques has proven to be of clinical value (1, 2). During the previous one and one-half years, we have been collecting specimens for cytologic study by abrasive technique and performing gastroscopy at one session. Prior gastric abrasion has not interfered with gastroscopy; and the combined procedure has proven to be safe, practical, informative, and not unduly uncomfortable for the patient.

TECHNIQUE

After fasting overnight, the patient is premedicated by parenteral phoenobarbital, meperidine, and atropine. Following the production of topical pharyngeal anesthesia with 2% Xylocaine, the Nieburghs' brush (3) is introduced into the stomach with the patient sitting up. The nylon fibers are ejected and the brush is swept up and down the stomach 3 or 4 times, while being continually rotated. Then the fibers are drawn into the tube, the apparatus is removed, and slides are prepared. Immediately following the collection of the cytologic specimens, an Ewald tube is passed, and the stomach emptied, prior to the performance of gastroscopy according to the standard technique (4).

RESULTS

A. Cytology: The cytologic collections were obtained under the usual conditions, the only variation being that the patient was sedated and the pharynx anesthetized; therefore, the procedure was tolerated somewhat better than usually. The results of the cytologic studies are not actually pertinent to this paper; however, the interpretations of the specimens collected for the cases in this report were representative of the author's experience in general. (This has been that the cytologist, when provided with a satisfactory specimen, is able to diagnose accurately the presence or absence of gastric malignancy 80% of the time.) It should be noted that satisfactory specimens only appear to be collected if cytologic collection precedes gastroscopy. When gastroscopy is performed first, the cells are too mutilated for adequate morphologic study. This is probably the result of the heat of the lamp of the gastroscope.

B. Gastroscopy—The prior gastric abrasion did not appear to interfere with the gastroscopic study in the 32 cases reported herein. Despite the frequent appearance of small amounts of blood in the drainage obtained through the Ewald tube, at not one gastroscopic examination was fresh blood observed in the stomach, nor was there any excessive or bloody secretion present to interfere with visualization of the mucosa or to coat and occlude the objective. To attest to the lack of interference with gastroscopy is the accuracy of diagnosis attained in those cases in which the lesion was visualized (tables 1 and 2).

The appearance of the gastric muscosa *per se* is worthy of comment. Not once were acute ulcerations of superficial erosions seen. This, despite the fact that on 3 occasions, pieces of abraded mucosa (consisting of the epithelial layer and lamina propria, as revealed on histologic study), about 2 cm x 0.5 cm in dimensions, were found on the brush. The most probable explanation is that I failed to visualize produced erosions. (The antrum was completely visualized in less than half the cases, and was incompletely visualized in all three cases from which pieces of mucosa were obtained.) The remote possibility does exist, however, that contraction of the muscularis mucosa led to approximation of the edges across the abraded area.

What was seen were numerous fine, red, linear streaks, which gave the appearance of scratches from the threads of the brush.

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These were not bleeding at the time of the examination. There were 2-4 of these scratches noted in most fields. No other pathology was observed that could be attributable to the brush or the gastric abrasion.

DISCUSSION

The preparation of this paper was prompted by the recent report of specimens of tissue obtained at the time of gastric abrasion for cytologic study (5). As we have also had this experience and have been able to study some of the cases gastroscopically, we felt our observations were worthy of reporting. In the author's personal experience, which is now approximately 150 cases of gastric abrasion for cytologic study, there has been no mortality or morbidity from this procedure, except for an occasional sore throat for 1 or 2 days. (We do not advocate, and have not performed, gastric abrasion for patients recovering from an upper gastrointestinal hemorrhage.) Morever, we have observed that, at times, the cytologist has been able to diagnose accurately a gastric lesion that has not been correctly identified by the radiologist or the gastroscopist. It is for this purpose that we have presented our data on combined collection of specimens for cytology plus gastroscopy. We believe that this procedure is safe and practical. Moreover, we believe that the combined procedure at one sitting is more comfortable and convenient for the patient, rather than have him return for a separate visit when he is not sedated or anesthetized.

REFERENCES

[1] *Raskin, H. F., Kirsner, J. B. and Palmer, W. R., Role of Exfoliative Cytology in the Diagnosis of Cancer of the Digestive Tract, J.A.M.A.* 169: 789-791 (1959).

[2] *Ayre, J. E. and Oren, B. C. New Rapid Method for Stomach Cancer Diagnosis: Gastric Brush. Cancer,* 6: 1177-1179 (1953).

[3] *Niehurgs, H. E.* Cytologic Techniques for Office and Clinic, *Grune and Stratton Publishers, New York, 1956. pp. 41-46.*

[4] *Schindler, R.*, Gastroscopy, the Endoscopic Study of Gastric Pathology. *The University of Chicago Press, Chicago, 1937, pp. 108-129.*

[5] *Rossman, M. and Wolf, J. Accidental Gastric Biopsies with the Ayre Brush. Gastroenterology,* 30: 686-689 (1956).

TABLE 1—Cases in which diagnosis has been proven by surgical exploration, biopsy, or necropsy.

Final Diagnosis	*No. of cases*	*Gastroscopic Diagnosis*		
		Correct	*Incorrect*	*Lesion not seen*
1. Polypoid carcinoma	3	3		
2. Flat ulcerating carcinoma	1	1		
3. Scirrhous carcinoma	1	1		
4. No gastric pathology	3	3		
5. Benign gastric polyp	1	1		
6. Chronic gastritis	1	1		
7. Erosive gastritis about a gastroenterostomy	1	1		
8. Diffuse gastric atrophy in association with pernicious anemia—				
as sole lesion	1	1		
in association with other lesions	2	1	1	

TABLE 2—Cases in which diagnosis appears probable after prolonged clinical observation.

Diagnosis	*No. of cases*	*Gastroscopic Diagnosis*		
		Correct	*Incorrect*	*Lesion not seen*
1. No organic disease of stomach (or gastric remnant after subtotal gastrectomy)	7	7		
2. Hiatus hernia without gastritis	2	2		
3. Benign gastric ulcer	6	4		2
4. Benign antral polyps	2			2
5. Healed antral ulcer	3			3

Gastric Polyposis

Allan A. Kaplan, M.D.*
John M. Rumball, M.D.**

Diffuse gastric polyposis is a relatively rare entity that has proven to be most confusing to the clinician, pathologist and radiologist. The main points of this confusion revolve around: (1) The nature of the polyps as to whether they are true adenomas or whether they are polypoid formations superimposed on a chronic hypertrophic gastritis; [1] (2) Whether the adenomatous polyps undergo malignant degeneration or whether gastric carcinoma is a separate entity to the diffuse adenomatosis. Marshall (1) summarizes this state of confusion very nicely, illustrating his presentation with three cases.

The original classification is that of Menetrier (2) in which gastric polyposis is divided into the categories of polyadenome polypeaux and polyadenome en nappe. Polyadenome polypeaux was characterized by Bockus (3) as showing innumerable discrete lobulated, pedunculated or cystic tumors with independent attachment to the stomach mucosa. They occur most often in the antrum, but may involve the entire stomach. Concomitant adenomatous polyps of the small and large intestine have also been described in some few cases. The second type of gastric polyposis, polyadenome en nappe, is characterized by the presence of closely packed, flat projections from the mucous membrane. These are without pedicle and are plague-like in character. There is a difference in feeling as to whether polyadenome en nappe is pseudopolyposis as a result of simple hypertrophy or hyperplasia of the gastric mucosa engrafted upon a severe type of hypertrophic gastritis or whether it is truly adenomatous tissue with a malignant potentiality.

The radiologist is of limited help in this problem other than for his function of demonstrating polypoid formations. There are no radiologic criteria that differentiate an adenomatous polyp from a pseudopolypoid formation secondary to hypertrophic gastritis. The gastroscopist has a somewhat better chance of making a correct differentiation in that adenomatous polyps are more likely to occur in the presence of normal gastric mucosa or engrafted upon an atrophic gastritis. The finding of hypertrophic gastritis would make one lean more towards pseudopolyposis. It is the general consensus of opinion, however, that with the high malignant potentiality of gastric polyps, ranging anywhere between 12% to 51% (Brunn and Pearl) (4) that all polyps be subjected to histologic examination. It has therefore become the practice to employ surgical intervention when the diagnosis of gastric polyposis is made.

With the advent of the biopsy gastroscope a new avenue of investigation is opened. We are presenting two cases of gastric polyposis; one, being of the polyadenome polypeaux variety in which the correct diagnosis of adenomatous polyps was made by gastric biopsy, using a Benedict gastroscope. The second case illustrates the pseudopolyposis seen in chronic hypertrophic gastritis. Unfortunately, because of the patient's refusal to consent to gastroscopy, this procedure was not done prior to surgery.

CASE REPORTS: The first patient was a 73-year-old colored male who was first admitted to Veterans Administration Hospital, Coral Gables, Florida in December 1950 because of a left inguinal hernia.

Physical examination revealed a well developed, well nourished colored male.

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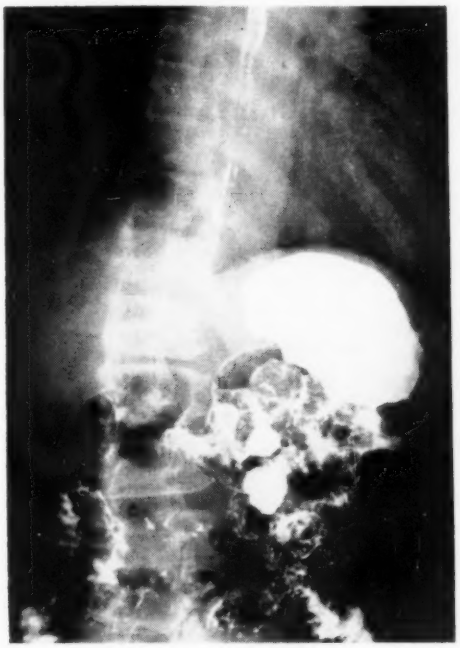
[1] "In this instance and in others where the term chronic hypertrophic gastritis is used it is meant to be synonymous with hyperplasia."

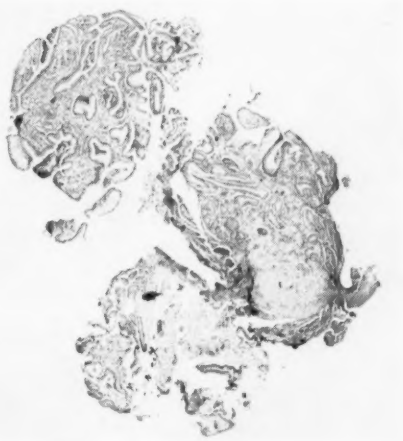
There was slight cardiomegaly with a systolic murmur in the mitral and aortic areas. A large complete left inguinal hernia was easily reducible. The prostate was moderately enlarged. CBC, urinalysis and BUN were within normal limits. The only X-rays taken were a chest film which showed arteriosclerotic

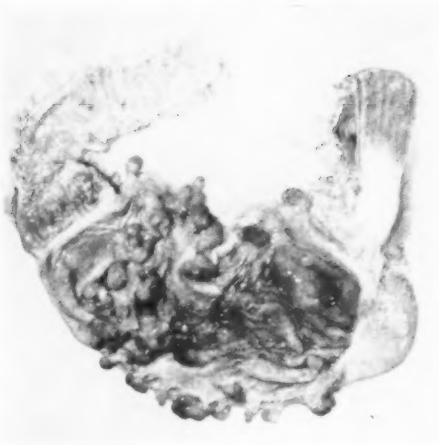


plagues in the aortic knob and cardiomegaly. His medical regimen included digitoxin, low salt diet and diuretics. He was discharged in good condition after repair of the hernia.

The second admission occurred in October 1955 because of weakness that had steadily progressed. There was anorexia and weight loss. There was no history of excessive alcohol intake. Physical examination revealed a poorly nourished male who appeared chronically ill. There was a Grade III systolic murmur in the apex and in the aortic area. The liver was palpable one fingerbreadth below the right costal margin. There was one plus pre-tibial edema. CBC was within normal limits; urinalysis revealed a faint trace of albumin and 10-20 WBC per high-powered field. Serum cholesterol, alkaline phosphatase, serum electrolytes, total protein and A-G ratio were within normal limits. Blood urea nitrogen on several occasions ranged between 36 mgs. % and 48 mgs. %. X-ray of the chest showed no change from previous film. X-rays of the skull were within normal limits. Intravenous pyelograms were technically poor but showed bilateral function. An upper gastrointestinal series revealed numerous polypoid irregularities throughout the entire stomach (Fig. 1). The esophagus and duodenum appeared normal. Gastroscopic examination with a Benedict gastroscope was performed and two mucosal biopsies (Fig. 2) were taken from the anterior wall and greater curvature. The mucosa of the body of the stomach was visualized and appeared smooth, redder than normally would be expected, with areas of elevation and depression. No definite ulcerations were seen. The examination was technically unsatisfactory because of the poor cooperation of the patient.

Electrocardiogram revealed a normal sinus rhythm, left bundle branch block, left ventricular hypertrophy and digitalis effect. The patient was treated with intravenous fluids, antibiotics, digitalization, diuretics, and showed a slight steady improvement during his hospital stay. The patient was discharged to a nursing home for further convalescence. Because

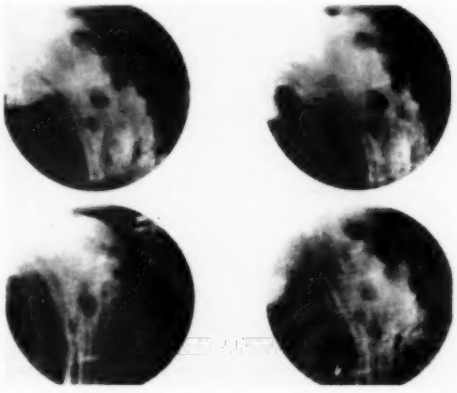


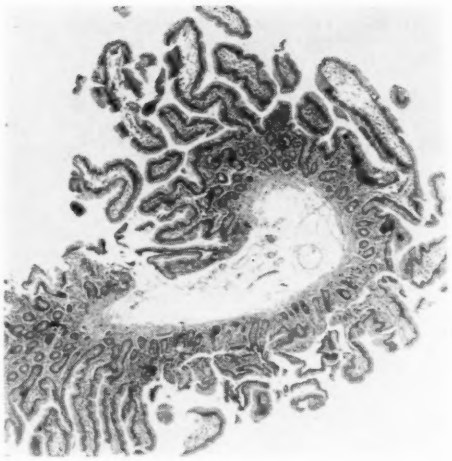


of his poor condition, no surgical procedure for the gastric polyposis was deemed advisable.

The patient's final admission was in May 1957 at which time he was admitted from a convalescent home, following a convulsive episode and unconsciousness. Physical examination revealed marked dehydration and nuchal rigidity. There was a temperature elevation to 100.8 F. Eyes were deviated to the right. There was hyperreflexia on the right side, a possible Hoffman on the left. The physical examination otherwise was unchanged from previous admission. The patient was treated with intravenous fluids, oxygen, antibiotics and digitalis and, despite this care, expired two days after admission. Laboratory data revealed hemoglobin of 13 grams, WBC 15,200, with a 7% neutrophile, BUN 79.5%, chlorides and CO_2 within normal limits. Autopsy revealed left cerebral vascular accident, polyposis of the stomach (Fig. 3); nephrosclerosis; malnutrition and dehydration; arteriosclerotic heart disease; two adenomatous polyps of the small intestine.

The second patient is a 63-year-old white female, who was complaining of nausea and vomiting of nine days duration. Concomitant with the above symptoms, the patient had diarrhea of a watery nature, consisting of three or four bowel movements per day. This was accompanied by cramping pains that were mostly in the left upper and left lower quadrants. These pains seemed to be worsened by eating, but would occur both day and night irrespective of food intake. The past history was essentially negative except for a cholecystectomy and appendectomy 25 years before. The patient had transient exertional angina which was relieved by taking nitroglycerin. Physical examination revealed a well developed, poorly nourished white female in no acute distress. There was a Grade I apical systolic murmur. Remainder of the physical examination was within normal limits. Stool showed 3 plus positive occult blood. Laboratory data, including CBC, urinalysis, fasting blood sugar and BUN were within normal limits. Gastric analysis revealed a histamine-fast achlorhydria. Upper gastrointestinal series revealed the esophagus to be normal, the body of the stomach contained several round polypoid masses (Fig. 4); no definite pedicles could be demonstrated; the pylorus and duodenum were normal. Barium enema was within normal limits. Chest X-ray showed evidence of pulmonary emphysema and slight osteoporosis. Because of the X-ray evidence of gastric polyposis, achlorhydria and occult blood positive stool, the patient was operated and a subtotal gastractomy was done. The pathology report was that of a diffuse chronic hypertrophic gastritis with foci of gladular hyperplasia with gastric polypoid formation (Fig. 5).





Discussion

Two cases of gastric polyposis have been presented. The initial diagnosis in both cases was made by X-ray examination and in one case gastroscopic examination with gastric mucosal biopsy revealed the correct diagnosis of adenomatous polyposis.

The entity of gastric polyposis though a relatively rare one is nevertheless an important one because of the definite malignant potentiality of the adenomatous polyps. There would be little difficulty in the philosophy of proper management of these cases were this the only consideration, but another form of gastric polyposis exists in the form of pseudopolyposis secondary to chronic hypertrophic gastritis with polypoid formations that are reactive rather than adenomatous. This is not adenomatous and presumably does not have the same malignant potentiality.

It has been shown in these two cases that X-ray examination cannot make a differential diagnosis between these two entities nor can other round-about studies of the stomach such as gastric analysis definitely differentiate between the two. Atrophic gastric mucosa with achlorhydria is felt to be a significant substrate for adenomatous polyps to develop; however, this is not a definite prerequisite for their formation.

With the advent of gastroscopy and especially the technic of gastric mucosal biopsy, a valuable addition to our diagnostic armamentarium is available to help in this differential diagnosis. Case I represents true adenomatous gastric polyposis in which gastroscopy and gastric mucosal biopsy was done and revealed the correct diagnosis. In the second case, gastroscopic examination was refused by the patient and because of the uncertainty of the proper diagnosis it was felt mandatory to carry out surgical exploration and histologic examination of the polyps. The correct diagnosis proved to be severe chronic hypertrophic gastritis with pseudopolypoid formation. Had the patient consented to gastroscopic examination and gastric mucosal biopsy the need for surgical intervention might have been obviated.

With the high malignant potentiality of adenomatous polyps of the stomach, it is felt that histologic examination of the polyps is mandatory in every case, and we strongly advocate that each diagnostic problem be gastroscoped with an adequate mucosal biopsy taken routinely.

References

[1] *Marshall, S. F. Gastric Polyposis. S. Clin. N. Amer. 32:857. 1952.*

[2] *Menetrier, P. Les Polyadenomes Gastriques et Leurs Rapports Avec le Cancer de l'Estomac. Arch. de physiol. norm. et path. 4 serie. Tome I. p. 33 et 236. 1888.*

[3] *Bockus, H. Gastroenterology. p. 699. Saunders 1944.*

[4] *Brunn, H. and Pearl, F. Diffuse Gastric Polyposis-Adenopapillomatosis Gastrica. S. G. and O. 43:559. 1926.*

[5] *Brunn, H. and Pearl, F. Multiple Gastric Polyposis. S. G. and O. 76:257. 1943.*

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NEXT ANNUAL MEETING—

MARCH 30, 1960

NEW ORLEANS, LA.

CASE REPORTS

A Case of "Mixed" Gastritis with Marked Lymphoid Hyperplasia—Clinical, Gastroscopic and Histologic Correlation

Julius Wolf, M.D. *and*
B. S. Gordon, M.D.*

This is a report of a patient whose initial gastroscopic examination presented a most unusual picture. A biopsy was done the following day with the Wood suction tube and his subsequent course was followed by both gastroscopic and histologic observations.

Case Report

A 68-year-old white man was referred for gastroscopy because of a four week history of epigastric pain radiating to the left side and back. The pain was partially relieved by food and associated with anorexia, nausea and vomiting of digested food. He had lost nine pounds in weight but had no melena or hematemesis. He had had previous admissions to the hospital for arteriosclerosis obliterans and prostatic hypertrophy but had never before experienced gastrointestinal symptoms.

The G.I. series was normal and free acid was present as determined by the azure-A resin test. On gastroscopic examination the gastric mucosa was normal in color but peristalsis was sluggish so that the antrum could be only partly visualized. Scattered throughout the gastric mucosa were very many minute rounded elevations which were slightly larger than pinhead in size. There was no exudate nor ulceration. The gastric folds appeared normal. The initial impression was that these findings might be compatible with gastric polyposis.

Biopsy with the Wood suction tube was performed on the next day and disclosed a markedly thinned gastric mucosa (Fig. 1). The gastric pits were shallow but in only a few areas were there glands between the pits and the muscularis mucosae. Some of the cells in the gastric pits displayed intestinal metaplasia. The superficial portions of the pits showed many goblet cells and in the bases Paneth cells were seen. There was a very considerable increase in the number of lymphocytes beneath the muscularis mucosae. These were accumulated as localized nodules without true follicle formation. This biopsy was interpreted as showing moderately severe atrophic gastritis with lymphoid hyperplasia. It was thought that the lymphoid nodules might correspond to the excrescences seen grossly.

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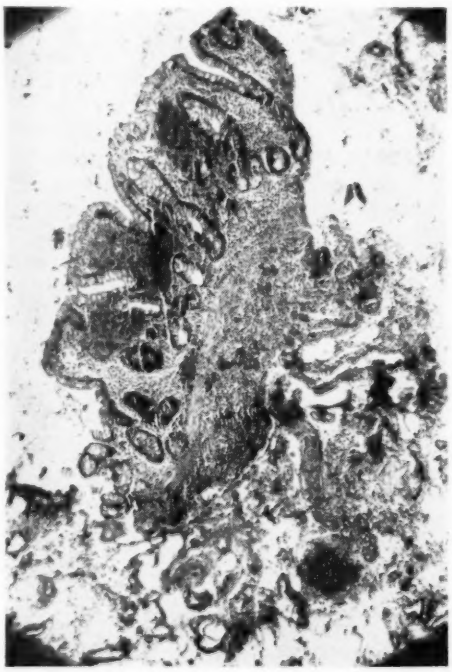
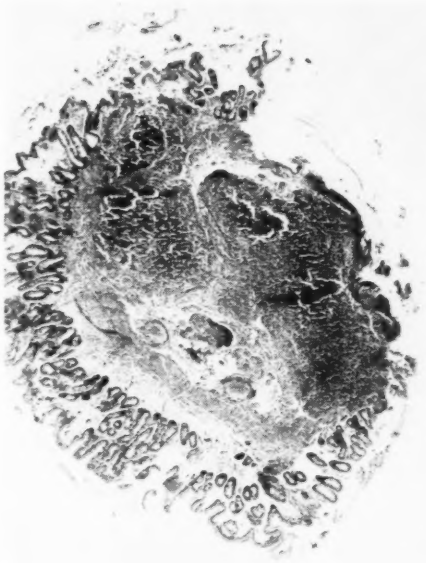
The patient was treated with a bland diet and antacids with some improvement of his symptoms. He was re-examined gastroscopically three weeks later and essentially the same elevations were seen. The gastric mucosa from the second biopsy performed the next day (Fig. 2) was thin and consisted entirely of gastric pits with a complete absence of gastric glands. There were a large number of goblet cells among the cells lining the pits as well as on the mucosal surface. At the bases of the pits were numerous Paneth cells as well as goblet cells. The most conspicuous feature of this section was the enormous increase in lymphocytes which formed large nodules which were not true follicles. This biopsy was interpreted as showing severe atrophic gastritis with marked lymphoid hyperplasia. There was not much difference from the first.

Six weeks later or thirteen weeks after the onset





of his symptoms the patient returned for re-examination. He was now completely asymptomatic. This time, however, he had achlorhydria. The gastroscopic findings were surprisingly different. While there were still a few of the elevations noted, they appeared to have a linear arrangement. There were fewer of them and the mucosa had a pale orange color through which many blood vessels could be seen. There was a coarse pebbling of the mucosa as well (Fig. 3). A third biopsy was performed the next day. The gastric mucosa was now moderately thinned (Fig. 4). The pits were shallow and extended for a distance of about half of the gastric mucosa and did not show the presence of any parietal cells. Within the superficial epithelium as well as in the epithelium lining the gastric pits were seen occasional goblet cells. No Paneth cells were noted at the bases of the pits. The degree of intestinalization was mild. There was a sprinkling of lymphocytes within the connective tissues of the mucosa accompanied by many eosinophiles. Deep to the muscularis mucosae were a few dense small accumulations of lymphocytes. A few atherosclerotic arteries were included in the biopsy.

This biopsy was interpreted as showing mild atrophic gastritis and very mild lymphoid hyperplasia.

Following the biopsy the patient vomited two cups of blood and passed several tarry stools. His hemoglobin fell from 14.0 grams to 8.6 grams. He was hospitalized but had no further bleeding and on conservative therapy recovered quickly.

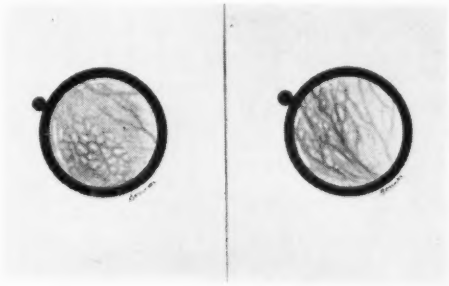
Discussion

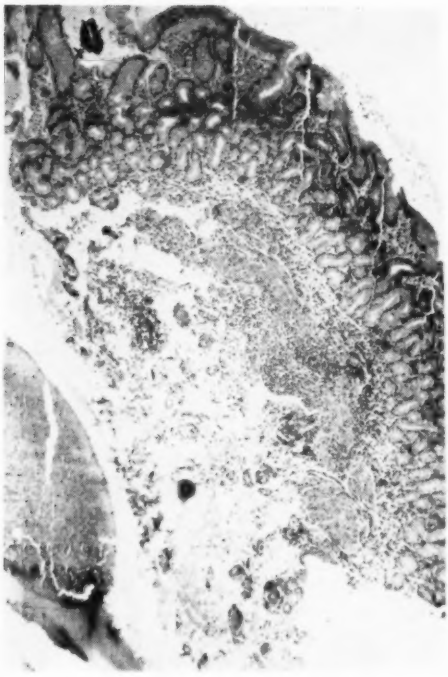
The small elevations seen gastroscopically, due we feel to the nodular aggregations of lymphocytes, are unique in our experience. This patient is also unusual in that he represents the first untoward incident in over 100 successful biopsies with the Wood suction tube. A 1% incidence of bleeding has been reported in larger series. [1]

All the biopsy specimens were taken at 50 cms. from the incisor teeth and are probably representative of the gastric mucosa at that time. Two specimens were obtained at each examination and were reasonably alike. Joske and his colleagues [1] have found that serial biopsies with the Wood tube were in substantial agreement in over 75% of instances. We feel that if care is exercised in taking the biopsy at the same level each time, the agreement would be even greater.

Single case reports are of value in posing questions rather than in answering them. Numerous attempts to correlate clinical symptoms with gastroscopic and histologic findings or even gastroscopic and histologic appearances in atrophic gastritis have met with only varied degrees of success. The correlation in this patient is so good as to make one cautious.[2-6]

A clinical picture attributable to atrophic gastritis can not be correlated with the histologic findings in most patients. There is however an apparent correlation in this patient between the severity of the atrophic gastritis and the presence of the lymphoid hyperplasia with the patient's symptoms. When he improved the atrophic gastritis became much milder and the lymphoid hyperplasia had practically disappeared. Biopsy examination at that time would have been interpreted as showing an apparent lack of correlation. One can only speculate as to whether better correlation than has been reported in large series of patients could be obtained through study of serial





biopsies. Patients with peptic ulcer will become asymptomatic on treatment even though the roentgenogram may still show an ulcer niche. To the unwary this too might represent an example of poor correlation between clinical and roentgenologic findings.

Gastroscopically, too, there is difficulty between the correlation of gross findings with histology. Usually the error lies in the gross appearance being normal with atrophic gastritis demonstrated histologically. The reverse situation occurs less often. In our patient the atrophic gastritis was not noted during the first two examinations. Signs as atrophy could have been obscured by the lymphoid hyperplasia. There would appear to be good correlation between the gross appearance of the stomach and the lymphoid hyperplasia.

Such lymph "follcles" as seen in this patient must be rare. They were not seen in the 1000 cases reported by Joske and his colleages.[1] However, they are described by Schindler as occurring in patients with hypertrophic gastritis. He classifies atrophic gastritis as occasionally being the end result of a superficial gastritis and when both hypertrophic and atrophic gastritis are present the gastritis is classified as "mixed." We have adopted this classification without implying that two separate processes are taking place. In our study of normal mucosa we have encountered one specimen with mild lymphoid hyperplasia without evidence of gastritis in an asymptomatic patient.[7] The significance of lymphoid hyperplasia in the gastric mucosa remains to be explored further.

Summary

Gastroscopic examination of a patient complaining of epigastric pain, disclosed pinhead elevations throughout the stomach which were thought to be due to large lymphoid nodules see on gastric biopsy. On serial observations we noted the disappearance of most of the nodules and the appearance of the signs of gastric atrophy. This coincided histologically with improvement in the lymphoid hyperplasia and athrophic gastritis. The patient became asymptomatic but developed achlorhydria.

REFERENCES

[1] *Joske, R. A., Finckh, E. S. and Wood, J. J. Gastric Biopsy. Quart. J. Med., 24:269, 1955.*

[2] *Atkins, L., Benedict, E. B. and Dreyfuss, J. R. Correlation of Symptoms with Gastroscopic Findings, X-ray Findings and Gastroscopic Biopsy in Gastritis. Gastroenterology, 33:385, 1957.*

[3] *Ricketts, W. E., Palmer, W. and Kirsner, J. B. Chronic Gastritis. Gastroenterology, 12:391, 1949.*

[4] *Selesnick, S. and Kinsella, E. D. Gastritis and Gastroscopic Biopsy. N.E.J.M., 248:842, 1953.*

[5] *Ylvisaker, P. S., Carey, J. B. Sr., Myhre, J. and Carey, J. B. Jr. Biopsy Studies of the Gastric Mucosa. Gastroenterology, 28:88, 1955.*

[6] *Benedict, E. B. and Mallory, T. B. Correlation of Gastroscopic and Pathological Findings in Gastritis. S.G. &O., 76:129, 1943.*

[7] *Gordon, B. S. and Wolf, J. Unpublished data.*

Multiple Carcinoma-in-Situ with Benign Gastric Ulcer

Edward J. Kurt, M.D. and
Charles H. Brown, M.D.

That extensive dysplastic changes in the mucosa of the stomach in the presence of a benign gastric ulcer is a rare occurrence is demonstrated by this being the first case seen by one of us (Charles H. Brown) in 20 years of clinical practice. The extensive dysplastic changes were diffusely present in the lower two-thirds of the stomach and sugested very early origin of multicentric carcinoma of the stomach.

CASE REPORT

This 61-year-old male patient was seen in March of 1958 complaining of "stomach trouble". He gave a history of recurrent intermittent ulcer-type symptoms for the previous four years. Given a diagnosis of duodenal ulcer elsewhere, his previous treatment had varied from strict ulcer schedules to the erratic use of occasional doses of antacids. His present complaint was burning, epigastric pain two hours after meals, radiating to the back and relieved by food or antacids.

The hemogram was normal and after histalog gastric analysis showed 36 units of free hydrochloric acid. Roentgen examination of the stomach showed a large gastric ulcer high on the lesser curvature with all the characteristics of a benign ulcer. (Fig. 1) The duodenal bulb showed minimal deformity, but no ulcer crater.

Gastroscopic examination showed the antrum to be normal with peristaltic activity present. The anterior wall and the greater curvature appeared normal. Proximal to the angle, an ulcer measuring 1½ cm. in diameter was observed. The ulcer had sharp, well-defined edges with a surrounding zone of erythema and had a punched-out appearance. The base of the ulcer was covered with a smooth white membrane. Some folds of mucosa were seen radiating into the ulcer. The impression of the gastroscopist was "benign gastric ulcer".

The patient was treated with routine ulcer therapy,[1] but as a supplement was given Cobalt 60 teletherapy.[2] Gastric cytology was done after the patient had received one treatment with Cobalt 60 (300 roentgen units to the fundus of the stomach).[3] The Papanicolaou slide on the gastric cytological aspiration was reported as "positive for cells compatible with malignancy". (Fig. 2) A review of the slide showed cells which had large nuclei with multiple nucleoli and with thick nuclear rims. The nuclei were very dark staining. There was no proportionate increase in the cytoplasmic content, which might have suggested that the cytological changes could be secondary to irradiation.[4] Cytological examination was repeated 3 days later, after the fourth treatment with Cobalt 60 tele-

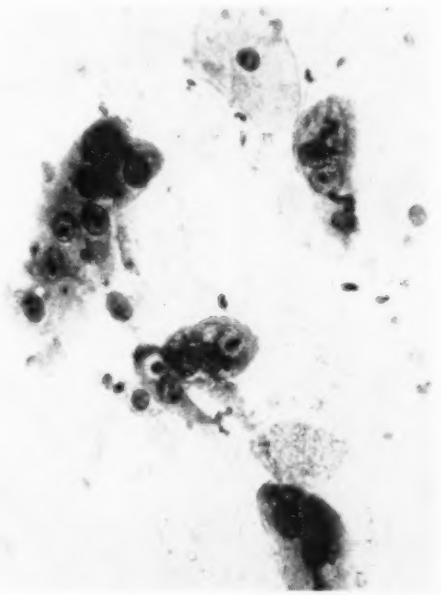


Figure 1: Roentgen examination that shows the gastric ulcer along the lesser curvature.

Figure 2: Dysplastic cells obtained by gastric washings.

therapy (1200 roentgen units to the fundus of the stomach). The cytological report was "dysplastic cells present".

In spite of the fact that clinically, roentgenologically, and gastroscopically the ulcer appeared benign, operation was advised because of the cytological findings. On March 31, 1958, a two-thirds gastric resection (Bilroth I), and a biopsy of the gastric fundus were done.

A direct smear of the ulcer showed dysplastic cells. Pathological examination of the biopsy from the fundus revealed no evidence of dysplasia or neoplasm. The pathologic examination of the resected portion of the stomach, which contained the ulcer crater showed chronic peptic ulcer of the lesser curvature of the stomach, severe dysplasia of the mucous membrane of the distal fundus, pyloric antrum and vestibule, and chronic inflammation of the lymph nodes.

Discussion

The most marked pathological changes that showed severe dysplasia were present in the distal half of the stomach (Fig. 3) while the Cobalt-60 teletherapy had been directed at the proximal portion. Consequently, we feel that the dysplasia was not caused by the irradiation, but was independent of both the irradiation and the benign gastric ulcer. The multiple areas of dysplasia suggest multicentric origin of neoplasm. Since the dysplasia was diffuse, the future progress of the patient will be of considerable interest. Will he develop carcinoma in the remaining portion of the stomach?

Cytological evalution of 30 patients before, during, and after irradiation with Cobalt-60 teletherapy have shown dysplasia in two, nuclear changes in one, and have been normal in the remainder. Until the significance of dysplasia is better understood, patients with these changes on cytological examinations must be considered as having potentially malignant lesions.

References

[1] *Brown, G. H. and Hoerr, S. O.: Treatment of duodenal ulcer, Postgrad. Med 12:308, 1952.*

[2] *Brown, C. H.: Complicated peptic ulcer treated by Cobalt-60 teletheraphy: A preliminary report of results in 34 patients: Henry Ford Hospital Med. Bull., 5:276-282, 1957.*

[3] *Kurt, E. J., Brown, C. H., McCormack, L. J., Hazard, J. B. and Belovich, D.: Exfoliative cytology as an aid to the diagnosis of gastric carcinoma, Cleve. Clin. Quart., 25:133-146, 1958.*

[4] *Goldgraber, M. B., Rubin, C. E., Palmer, W. L. Dobson, R. L., and Massery, B. W.: The early gastric response to irradiation. A serial biopsy study. Gastroenterology, 27:1, 1954.*

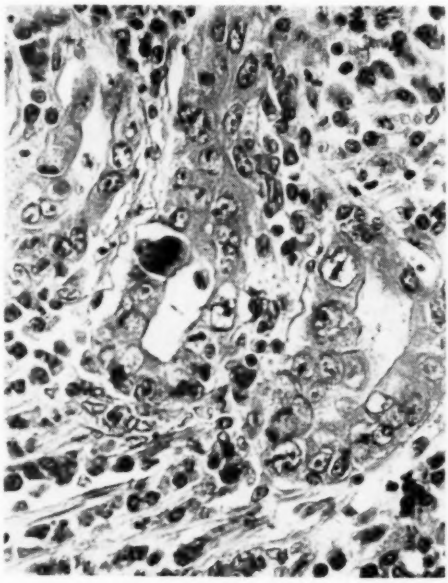
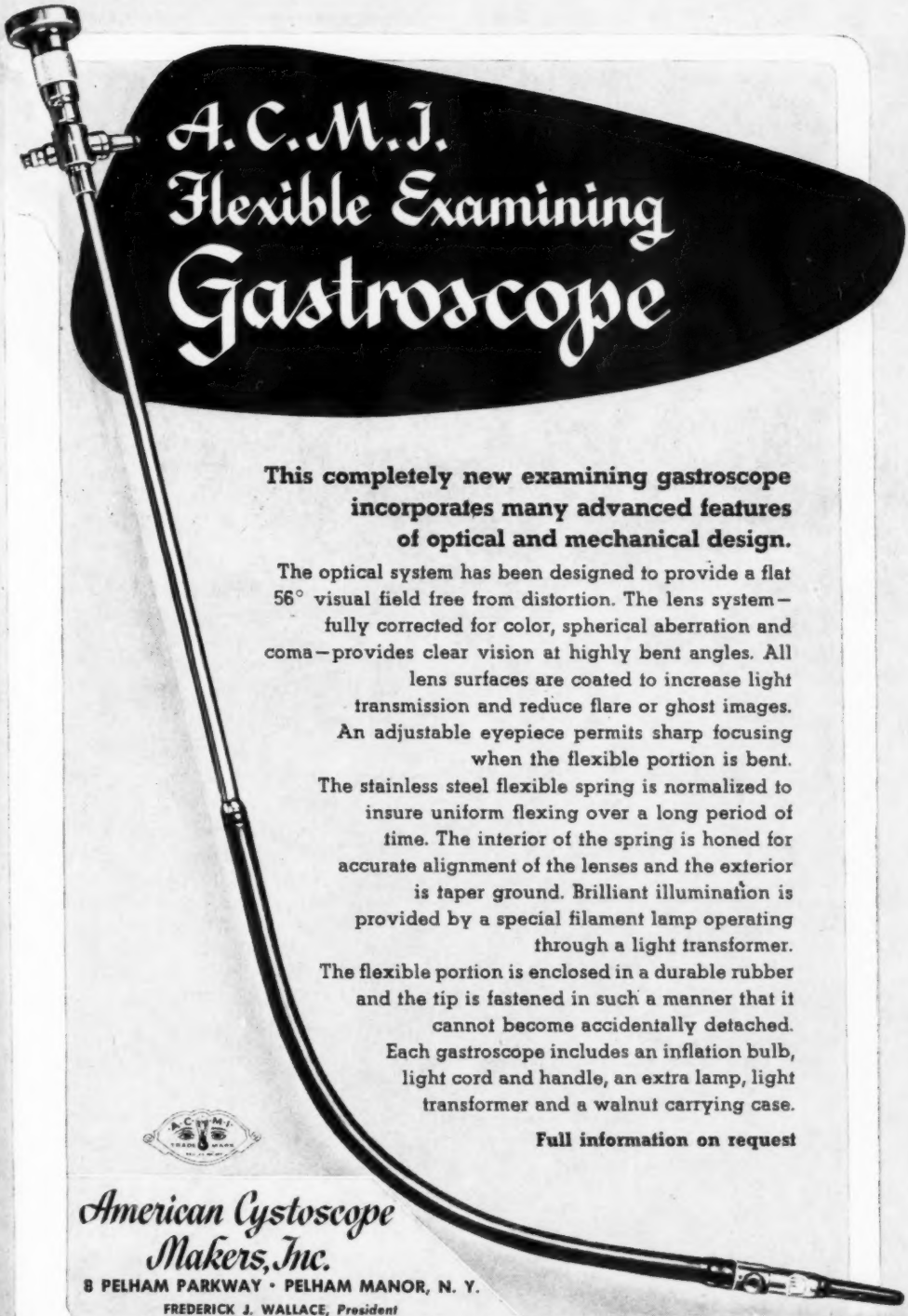


Figure 3: Histologic specimen of antrum. Dysplastic cells are noted, suggesting multicentric carcinoma-in-situ.



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Carcinoma of the Intrathoracic Stomach: Report of a Case*

Arthur M. Olsen, M.D. *and*
O. Theron Clagett, M.D., Rochester, Minnesota

A 56-year-old Mexican of Spanish descent registered at the Mayo Clinic on May 13, 1947. For 35 years this man had had recurring episodes of epigastric pain beginning within an hour after meals and relieved by food, milk, or antacid preparations. On a number of occasions he had had episodes of hematemesis and undoubtedly he had passed tarry stools on several occasions. About 1930 a diagnosis of duodenal ulcer had been established and a dietary regimen had been prescribed. The last episode of gastrointestinal hemorrhage had occurred in 1935. Subsequently the patient had had very little trouble with his epigastric pain; but in recent years substernal burning had troubled him, especially after meals, and often had awakened him during the night. This distress, like the other, was relieved by drinking milk or taking antacid preparations. Periodicaly "spasms" had been felt in the lower part of the substernal area.

On examination the patient's height was measured as 69 inches and his weight as 200 pounds. Except for his obesity there were no significant untoward physical findings. The blood pressure and findings from the usual laboratory studies were within normal limits. However, roentgenographic studies of the esophagus and stomach disclosed an esophageal hiatal hernia through which about one third of the stomach extended into the thorax (fig. 1*a*). Evidence of duodenal ulcer was noted also. The patient was given a weight-reduction diet with bland features and it was suggested that he elevate the head of his bed and take antacids routinely after meals and at bedtime. It was recommended that after he had lost 30 to 35 pounds he should return for surgical consideration.

The patient was next seen in July, 1951. He had lost weight to 160 pounds and by carrying out the above recommendations he had managed to remain quite comfortable during most of the preceding 4 years. However, he had had a gastrointestinal hemorrhage with hematemesis a few days before his second registration. Roentgenographic studies again gave evidence of a large hiatal hernia and duodenal ulcer.

On July 21, 1951, the esophageal hiatal hernia was repaired through an abdominal incision. The upper one fourth of the stomach was found to be within the chest and appeared somewhat edematous and congested. There was no evidence of activity of the old duodenal ulcer, and it was thought that the hiatal hernia was responsible for the patient's hemorrhage. A satisfactory repair of the hernia was accomplished, and the esophagus was judged to be of normal length. Presence of esophagitis was suspected but, unfortunately, esophagoscopy was not performed either before or immediately after the operation. A postoperative roentgenogram showed that the entire stomach was below the diaphragm, and apparently a satisfactory surgical result had been obtained.

The patient returned in October, 1952, complaining of persistent substernal burning. Roentgenographic studies demon-

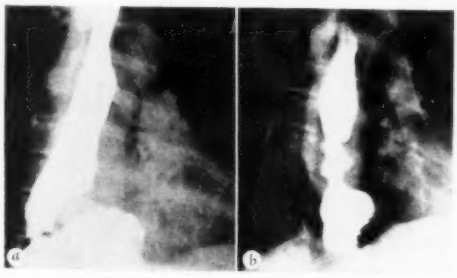

Figure 1. Hiatal hernia a. Preoperative, May 21, 1947. b. Recurrent, with esophageal shortening and stricture, August 24, 1953.

* *From The Mayo Clinic and The Mayo Foundation, Rochester, Minnesota. The Mayo Foundation is a part of the Graduate School of The University of Minnesota.*

strated a recurrence of his esophageal hiatal hernia with considerable esophageal shortening. The patient declined esophagoscopic examination and was unwilling to consider any further surgical procedure. At this visit he was having very mild dysphagia. In the ensuing months, however, swallowing became increasingly difficult.

When he returned to the clinic in August, 1953, roentgenograms again revealed a shortened esophagus with stricture (fig. 1*b*). He submitted to esophagoscopic examination, which disclosed definite evidence of esophagitis in the lower third of the esophagus although no actual ulceration was seen. The esophagus was shortened and the esophagogastric junction was constricted. This was dilated to the size of 50 F. by the passage of metal beads over a previously swallowed thread. Multiple biopsies from the lower part of the esophagus and the stomach afforded no evidence of neoplasm. No further surgical treatment was recommended at this time. The patient was advised to keep the head of the bed elevated and to use antacids regularly after meals and at bedtime.

From then through 1956 the patient returned at approximately yearly intervals in order that dilations of his esophageal stricture could be carried out. These treatments were performed with Plummer sounds passed over a previously swallowed thread, and on each occasion a dilation to the size of 45 or 46 F. was effected without undue difficulty. Roentgenographic studies made at each of these visits invariably showed a hiatal hernia of the short-esophagus type with stricture at the esophagogastric junction. Except for his recurring dysphagia the patient remained comfortable during the years 1954 through 1956.

When he registered in October, 1957, the esophagogram again revealed a stricture of the lower esophagus in association with hiatal hernia (fig. 2*a*). Efforts were made to carry out a dilation similar to that done in previous years but it was noted that the stricture was considerably more resistant than at any previous occasion. Smears made from the dilating spiral and sent to the cytologic laboratory for study were found to contain malignant cells. At esophagoscopic examination there appeared to be ulcerative esophagitis in the lower esophagus. Multiple biopsies were made of the lower levels of the esophagus and the upper part of the stomach. Biopsies of the esophageal mucosa indicated only inflammatory changes, but specimens from the stomach revealed high-grade adenocarcinoma.

On November 7, 1957, Dr. O. T. Clagett performed a transthoracic resection of the lower part of the esophagus and the upper end of the stomach. It was necessary to remove the spleen also. The pathologic specimen included 5 cm. of the esophagus and 9 cm. of the stomach. An annular ulcerating adenocarcinoma, grade 3 (Broders' method), involving the cardiac end of the stomach was demonstrated. Two lymph nodes were found to be metastatically involved.

The patient did well postoperatively but returned to the clinic on June 30, 1958, complaining of recurrent dysphagia. An esophagogram showed narrowing of the esophagogastric anastomosis (fig. 2*b*). Esophagoscopy demonstrated recurrent carcinoma of the stomach. Palliative dilations were done on July 7 and July 9, after which the patient returned home.

Comment

This case has been presented in considerable detail because a number of points in the typical history of hiatal hernia are brought out. First of all, this man had duodenal ulcer of many years' duration, and in experience here hiatal hernias of the short-esophagus type are seen often in patients who have duodenal ulcer. Second, the relationship of hiatal hernia to obesity is brought out in this case. My colleagues and I think that often the development of

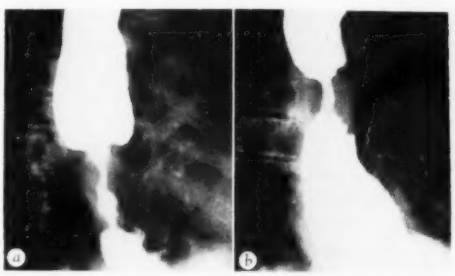

Figure 2. *a.* Adenocarcinoma in hiatal hernia, October 30, 1957. *b.* Postoperative recurrence of adenocarcinoma, July 3, 1958.

hiatal hernia can be correlated with increased intra-abdominal pressure. Third, in this case shortening of the esophagus has taken place during the course of observation. We believe that shortening of the esophagus results from healing and cicatrization of the lower part of the esophagus, which in this case followed a successful repair of the hiatal hernia. It is a sequence we have witnessed on a number of occasions, and in our opinion esophagoscopy should be carried out invariably before repair of a sliding hernia. I am sure that esophagoscopy would have been carried out preoperatively in this case, had our patient not been so refractory to suggestion. Although the presence of esophagitis may be an urgent indication for repair of esophageal hiatal hernia, severity of the esophagitis should make the surgeon cautious in his promises regarding long-term results.

Of particular interest in this case is the development of carcinoma in the intrathoracic stomach. Much has been written concerning the development of carcinoma in paients with benign esophageal stenosis. The frequent occurrence of carcinoma of the upper part of the esophagus in connection with the webs of the Plummer-Vinson syndrome is well known. Not infrequently malignant changes develop from long-standing lye stricture, and esophageal carcinoma in association with chronic esophagitis has been described often. It is to be noted, however, that in most instances the carcinoma is of the squamous cell variety and has its origin within the esophageal mucous membrane. In particular, adenocarcinoma of the upper levels of the esophagus probably is related to ectopia of the mucous membrane.

Adenocarcinoma of the intrathoracic stomach has been described also. The simultaneous discovery of hiatal hernia and gastric carcinoma is not uncommon, but it is a little unusual actually to witness the development of gastric carcinoma in a hiatal hernia of long standing. We have seen this development in some other patients who have had known hiatal hernias, especially those of the short-esophagus type. In this case, however, gastric carcinoma developed in the intrathoracic portion of the stomach of a patient whom we had observed for 10 years and who probably had had his hiatal hernia for at least 25 years.

NOTES FROM THE INSTRUMENT MAKERS

The editor has received correspondence from time to time from the makers of gastroscopes and endoscopic instruments in regard to their plans for future development of the method together with improvements of instruments they are presently manufacturing. This led to the idea that a department of the Bulletin could regularly be devoted to communications from the companies who are manufacturing the instruments and who are naturally interested in the development of better facilities for endoscopy.

I should like to state here that the utmost cooperation has been received from the companies through their owners or technicians in years past. They realized very early the importance of adequate training for purchasers of the instruments and followed in every way the suggestions of the American Gastroscopic Society in urging newcomers to have thorough training and adequate experience. The development of the biopsy technique could not have been perfected without combining the endoscopists' experience with the technical experience of the instrument makers.

There is not space in the present issue to cover all the "news material" gathered from these sources. In subsequent issues it is hoped to print either partially or completely notes which will describe what has been accomplished and what is at present in progress from all of our manufacturers of scopes.

Also, the instrument makers are to be greatly thanked for their advertising support in recent issues. The editor and staff take this opportunity to express the appreciation of the American Gastroscopic Society as the cost of this highly specialized publication could hardly have been underwritten from the treasury of this small society.

Please watch for the column entitled "Notes From the Instrument Makers" in future issues.

ROY L. SEXTON, M.D., *Editor*

ABSTRACTS

Selesnick, S. and D., A Clinical Appraisal of Gastroscopy., p. 95-8. Connecticut M. J. 22 (2) Feb. 1958.

This condensed and excellent report is derived from the source of one of the largest gastroscopic clinics in the United States. While primarily emphasizing the conventional concepts of flexible gastroscopy, the author also recapitulates the indications, complications, hazards and dangers of a gastroscopic examination. It would benefit the neophyte to review the experiences of the author. This report describes various gastroscopes currently employed and evaluates a large series of gastroscopic visualizations. The author discusses postoperative gastritis and confirms that this condition may have either clinical or gastroscopic implications. The value of a gastroscopic biopsy is demonstrated in the differential diagnosis of certain intramural gastric diseases, particularly chronic hypertrophic gastritis simulating neoplasm, lymphosarcoma, and infiltrating gastric carcinoma. Above all this report, furthermore, systematically suggests that gastroscopic visualization complements a clinical provisional diagnosis. As such, the beginner meets his first qualification in experiencing gastroscopy.

Martin S. Kleckner, Jr., M. D.

Taylor, H., Difficulties and Dangers in Gastroscopy. p. 79-91. Gastroenterology 35 (1) July 1958.

The dangers of gastroscopic examination based on a survey of the literature and the authors personal experience are reviewed. Difficulty may occur in the pharyngo-esophagus, the lower esophagus, or the stomach. Most of the discussion is of the injuries of the pharyngo-esophagus. The proper techniques of avoiding these are shown by diagramatic pictures in the manuscript. The common accidents that occur in this area are due to crush injuries or actual perforations. In crush injuries, the muscle wall may be damaged but the serosa is often not penetrated and infection may not result. In penetrating injuries, mediastinitis is inevitable and a sloughing hole in the esophagus often develops. Symptoms of mediastinitis are pain, fever, and dysphagia. Injuries to the lower esophagus are usually tearing injuries and are often associated with obstructing lesions such as carcinoma. The best treatment is immediate surgical drainage. Injuries to the stomach are usually due to perforation. It is pointed out that prompt application of proper treatment to the various types of injuries is essential to reduce serious consequences.

R. A. McNaughton, M. D.

Benedict, E. B., Endoscopic Biopsies of the Esophagus, Stomach, and Peritoneal Cavity: Gastroscopy with Biopsy. p. 619-21. Gastroenterology 34 (4) Apr. 1958.

Dr. Benedict reviews the indications for endoscopic biopsies in the course of esophagoscopy, gastroscopy, and peritoneoscopy. He emphasizes that no matter how certain may be the visual impression, errors are common enough so that biopsy often is indicated. Skillful selection of the site and depth of biopsy depend upon the experience of the endoscopist.

In the esophagus: esophagitis, hiatus hernia, esophageal ulcer, esophageal stenosis, lye stricture, achalasia, benign and malignant tumors are the conditions in which biopsy may prove of great value. Rare conditions such as esophageal web, scleroderma, pellagra, and pemphigus may occasionally be diagnosed by biopsy.

In the stomach, gastritis is the most commonly encountered disease in which pathologic examination can be of great value. From a biopsy specimen, only acute gastritis, chronic gastritis, and gastric atrophy can be distinguished by the pathol-

ogist. In gastric ulcer and gastric carcinoma, the value of biopsy is great when tumor is found, but may be erroneous when negative. In the differential diagnosis of enlarged rugae, biopsy is mandatory to distinguish chronic gastritis, lymphoma and carcinoma.

Peritoneoscopy is chiefly of value in the diagnosis of carcinoma. Biopsy of tumor nodules or liver biopsy, performed under direct vision, are the chief methods employed. Tuberculous peritonitis, cirrhosis, and lymphoma may be confirmed by the pathologist with ease.

The emphasis of this paper is timely and proper.

As Dr. Benedict points out, the value of biopsy from other types of endoscopic examination of the body cavities is well established; and the examination of biopsy material is no less important in the stomach, esophagus, and peritoneal cavity.

JULIUS WENGER, M. D.

Clinical Note: Post-Endoscopic Bacteremia

Norman M. Scott, Jr., Lt. Colonel, M.C., U.S.A.*

The possibility of the development of a transient bacteremia following dental, pharyngeal or genitourinary instrumentation has long been recognized. Bacterial endocarditis is a real danger following those examinations in patients with septal and valvular cardiac lesions, and the employment of prophylactic antibiotics has become an accepted principle.

Esophagoscopy and gastroscopy rarely cause actual injury to a patient. Almost always however, there is stretching and occasionally mild abrasion of tissue in the hypopharynx and upper esophagus. These are areas known to harbor potentially dangerous organisms in a latent state. It was reasoned, therefore, that a transient bacteremia might result following peroral endoscopy, just as it does following the other procedures noted above.

The following simple study was undertaken:

One hundred blood cultures were drawn within 10 minutes of esophagoscopy or gastroscopy on 93 unselected patients. All were afebrile and without any overt pharyngeal infection. Endoscopy was being carried out for a variety of conditions common in any gastroenterology Clinic. Five of the blood cultures were positive and the following organisms were reported:

1. *Staphylococcus albus, coagulase negative*—3 times.
2. *Anaerobic streptococcus*—2 times.

The staphylococcus albus, coagulase negative, was considered a non-pathogen, and possibly was merely a contaminant. However, the Anaerobic streptococcus was considered potentially dangerous.

Bacterial endocarditis has not been reported following peroral endoscopy so far as is known. The possibility however, would appear to exist. This study admittedly was rather simple and might well have been made more scientifically sophisticated by obtaining cultures from the patients before endoscopy and also throat cultures. However, in no instance was there any clinical evidence to suggest bacteremia either before or after endoscopy, and blood cultures would not have been drawn except as part of this study.

It would seem that there are enough dangers associated with peroral endoscopy without instituting a purposeful search for another. However, the possibility of the production of a transient bacteremia following peroral endoscopy appears to be a real one. It would therefore be wise to include a careful history and physical examination to detect any rheumatic, arteriosclerotic or congenital heart lesion prior to endoscopy. The institution of appropriate antibiotic protection is clearly indicated in such cases.

* *Chief, Gastroenterology Service, Brooke Army Hospital, Fort Sam Houston, Texas.*

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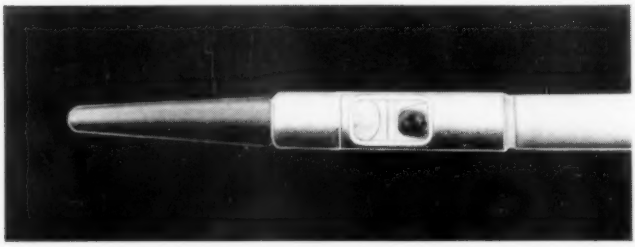

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- **Available in two lengths, 81 cm and 104 cm**

The Bernstein Modification built into the small 9mm Eder-Palmer Trans-Esophagoscopic Gastroscope solved this problem by combining the viewing mirror with the illuminating bulb in one chamber (Fig. 1). Mucosa lying directly on the objective window can be seen in true color, sharp and greatly magnified. A clear image is obtained by an adjustable eye piece for close and distal viewing. This improvement eliminates the danger of introducing a rigid tube through the cardia and allows the examiner to see this important area where frequently lesions were suspected but could not be seen. The new Gastroscope can be used during an Esophagoscopy by inserting it through the Esophagoscope allowing you to see the mucosa at-face or right angle greatly magnified. The posterior wall, not visible with the conventional type scope, can now be visualized with the new instrument.

The Eder-Palmer Trans-Esophagoscopic Gastroscope with the Bernstein Modification remains a routine Gastroscope easily tolerated by patients due to its very small diameter. In turn it can be used as a trans-esophagoscopic Gastroscope slipping through the Esophagoscope sheath easily, doing a combined Gastroscopy and Esophagoscopy with one instrument introduction while adding considerably not only in area visualized but also in the accuracy of a diagnosis. This instrument is now our standard Gastroscope and is available in two lengths—*the standard 81 cm instrument* and *the extra long model, 104 cm.* The longer instrument is used if trans-esophagoscopic gastroscopy is done extensively which necessitates having a longer rigid portion in order to have a full flexible portion protrude out of the 53 cm esophagoscope sheath when in the patient.

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